MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
11805 SW 26 Street, Room 208
Miami, Florida 33175-2474
T (786)315-2590 F (786) 31525-99
www.miamidade.gov/economy

DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION

NOTICE OF ACCEPTANCE (NOA)

Soprema, Inc.
310 Quadral Drive
Wadsworth, OH 44281

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER - Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code including the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: Soprema Modified Bitumen Roofing Systems over Steel Decks.

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA revises NOA No. 10-0408.05 and consists of pages 1 through 52.
The submitted documentation was reviewed by Jorge L. Acebo.

ROOFING SYSTEM APPROVAL

Category:	Roofing
Sub-Category:	Modified Bitumen
Material:	SBS
Deck Type:	Steel
Maximum Design Pressure:	-165 psf.

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

Product	Dimensions	Test Specification	Product Description
Sopra G	39” x 108’ (3.5 sq.)	ASTM D4601	Fiberglass reinforced oxidized asphalt base sheet for bonding or mechanically attaching to substrate. **For use as a base/ply sheet only.**
Modified Sopra G	39” x 108’ (3.5 sq.)	ASTM D4601	Fiberglass reinforced modified asphalt base sheet for bonding or mechanically attaching to substrate. **For use as a base/ply sheet only.**
Soprabase	39” x 99’ (3 sq.)	ASTM D4601	Oxidized asphalt, polyester reinforced, sand-surface base sheet. **For use as a base/ply sheet only.**
Soprabase S	39” x 65’ (2 sq.)	ASTM D4601	SBS modified bitumen, polyester reinforced, sand-surfaced base sheet. **For use as a base/ply sheet only.**
Soprabase TG	39” x 65’ (2 sq.)	ASTM D4601	SBS modified bitumen, polyester reinforced, film-surfaced base sheet. **For use as a base/ply sheet only.**
Sopra IV	36” x 180’ (5 sq.)	ASTM D2178 Type IV	Type IV, fiberglass reinforced, smooth surfaced ply sheet used in multi-ply systems and complies with ASTM and UL Standards. Applied in hot asphalt or cold adhesive.
Sopra VI	36” x 180’ (5 sq.)	ASTM D2178 Type IV	Type IV, fiberglass reinforced, smooth surfaced ply sheet used in multi-ply systems and complies with ASTM and UL Standards. Applied in hot asphalt or cold adhesive.
Colvent TG	39” x 49’ (1.5 sq.)	ASTM D6163	Fiberglass reinforced, modified bitumen membrane with 1” wide factory applied heat weldable strips on back side.
Colvent 180 TG	39” x 33’ (1 sq.)	ASTM D6164	Polyester reinforced, modified bitumen membrane with 1” wide factory applied heat weld strips on back side.
Elastophene Sanded	39" x 49' (1.5 sq.)	ASTM D6163	Fiberglass reinforced modified bitumen membrane sanded on both sides. Applied in hot asphalt, cold adhesive or ribbon stripping.
Elastophene Sanded 3.0	39" x 33' (1sq.)	ASTM D6163	Fiberglass reinforced modified bitumen membrane sanded on both sides. Applied in hot asphalt, cold adhesive or ribbon stripped.

Elastophene HS Sanded	39” x 66’ (2 sq.)	ASTM D6163	Fiberglass reinforced modified bitumen membrane with fire retardants and sanded on both sides. Applied in hot asphalt, cold adhesive or ribbon stripping.
Elastophene PS	39" x 49' (1.5 sq.)	ASTM D6163	Glass reinforced modified bitumen membrane with a plastic burn-off film for heat weld bonding to the top side. Applied in hot asphalt, cold adhesive or ribbon stripping.
Elastophene PS 3.0	39" x 49' (1.5 sq.)	ASTM D6163	Glass reinforced modified bitumen membrane with a plastic burn-off film for heat weld bonding to the top side. Applied in hot asphalt, cold adhesive or ribbon stripping.
Elastophene SP	39" x 49' (1.5 sq.)	ASTM D6163	Glass reinforced modified bitumen membrane with a plastic burn-off film on the bottom and sanded on the top. Applied b heat welding or ribbon stripping (after removal of plastic burn-off film).
Elastophene SP 3.0	39" x 49' (1 sq.)	ASTM D6163	Glass reinforced modified bitumen membrane with a plastic burn-off film on the bottom and sanded on the top. Applied b heat welding or ribbon stripping (after removal of plastic burn-off film).
Elastophene Flam	39" x 33' (1 sq.)	ASTM D6163	Fiberglass reinforced modified bitumen membrane covered on both sides with a plastic burn-off film. Applied by heat welding.
Elastophene Flam 2.2	39" x 49' (1.5 sq.)	ASTM D6163	Fiberglass reinforced modified bitumen membrane covered on both sides with a plastic burn-off film. Applied by heat welding.
Elastophene Flam HS	39” x 33’ (1 sq.)	ASTM D6162	Woven fiberglass/polyester composite reinforced modified bitumen membrane with fire retardants and plastic burn-off film on both sides. Applied by heat welding.
Elastophene 180 Sanded	39" x 49' (1.5 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane sanded on both sides. Applied in hot asphalt, cold adhesive or ribbon stripping.
Elastophene 180 PS	39" x 49' (1.5 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane with a sanded bottom and a plastic burn-off film on the top. Applied in hot asphalt, cold adhesive or ribbon stripping.
Elastophene GR	39" x 33' (1 sq.)	ASTM D6163	Fiberglass reinforced modified bitumen membrane with fire retardants, sanded on the bottom and mineral granules on the top. Applied in hot asphalt, cold adhesive or ribbon stripping.
Elastophene LS FR GR	39" x 33' (1 sq.)	ASTM D6163	Fiberglass reinforced modified bitumen membrane with fire retardants, sanded on the bottom and mineral granules on the top. Applied in hot asphalt, cold adhesive or ribbon stripping.

Elastophene FR GR	39" x 33' (1 sq.)	ASTM D6163	Fiberglass reinforced modified bitumen membrane with fire retardants, sanded on the bottom and mineral granules on the top. Applied in hot asphalt, cold adhesive or ribbon stripping.
Elastophene FR+ GR	39" x 33' (1 sq.)	ASTM D6163	Fiberglass reinforced modified bitumen membrane with fire retardants, sanded on the bottom and mineral granules on the top. Applied in hot asphalt, cold adhesive or ribbon stripping.
Elastophene HS FR GR	39” x 33’ (1 sq.)	ASTM D6162	Woven fiberglass/polyester composite reinforced modified bitumen membrane with fire retardants, sanded on the bottom and mineral granules on the top. Applied in hot asphalt, cold adhesive or ribbon stripping.
Elastophene Flam GR	39” x 33’ (1 sq.)	ASTM D6163	Fiberglass reinforced modified bitumen membrane with fire retardants, a plastic burn-off film on the bottom and mineral granules on the top. Applied by heat welding.
Elastophene Flam LS FR GR	39” x 33’ (1 sq.)	ASTM D6163	Fiberglass reinforced modified bitumen membrane with fire retardants, a plastic burn-off film on the bottom and mineral granules on the top. Applied by heat welding.
Elastophene Flam FR GR	39" x 33' (1 sq.)	ASTM D6163	Fiberglass reinforced modified bitumen membrane with fire retardants a plastic burn-off film on the bottom and mineral granules on the top. Applied by heat welding.
Elastophene Flam FR+ GR	39" x 33' (1 sq.)	ASTM D6163	Fiberglass reinforced modified bitumen membrane with fire retardants a plastic burn-off film on the bottom and mineral granules on the top. Applied by heat welding.
Elastophene Flam HS FR GR	39” x 33’ (1 sq.)	ASTM D6162	Woven fiberglass composite reinforced modified bitumen membrane with fire retardants, a plastic burn-off film on the bottom and mineral granules on the top. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film).
Sopralene 180 Sanded	39" x 33' (1 sq.) 39” x 26’ (¾ sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane sanded on both sides. Applied in hot asphalt, cold adhesive or ribbon stripping.
Sopralene 250 Sanded	39" x 33' (1 sq.) 39” x 26’ (¾ sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane sanded on both sides. Applied in hot asphalt, cold adhesive or ribbon stripping.
Sopralene 180 Sanded 2.2	39" x 33' (1 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane sanded on both sides. Applied in hot asphalt or cold adhesive.
Sopralene 180 PS	39" x 33' (1 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane with a plastic burn-off film on the top and sanded on the bottom.

Sopralene 180 PS 2.2	39" x 49' (1.5 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane with a sanded bottom and a plastic burn-off film on the top. Applied in hot asphalt, cold adhesive or ribbon stripping.
Sopralene 180 SP 3.5	39” x 33’ (1 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane with a plastic burn-off film on the bottom and sanded on the top. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film).
Sopralene 180 SP	39" x 33' (1 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane with a plastic burn-off film on the bottom and sanded on the top
Sopralene 250 SP	39" x 33' (1 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane with a plastic burn-off film on the bottom and sanded on the top
Soprafix [S]	39" x 33' (1 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane. Applied by mechanical attachment.
Soprafix Base 612	39" x 33' (1 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane. Applied by mechanical attachment.
Soprafix [F]	39" x 33' (1 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane. Applied by mechanical attachment.
Soprafix Base 613	39" x 33' (1 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane. Applied by mechanical attachment.
Soprafix [X]	39" x 33' (1 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane. Applied by mechanical attachment.
Soprafix Base 614	39" x 33' (1 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane. Applied by mechanical attachment.
Soprafix	39” x 33’ (1 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane with a 4-inch or 5-inch wide side lap with a plastic burn-off film on the bottom and sanded on the top. Applied by mechanical attachment. Lap heat welded or sealed with an approved cold adhesive.
Soprafix Base 622	39” x 33’ (1 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane with a 4-inch or 5-inch wide side lap with a plastic burn-off film on the bottom and sanded on the top. Applied by mechanical attachment. Lap heat welded or sealed with an approved cold adhesive.

Soprafix-e	39” x 33’ (1 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane with a 5-inch wide side lap with a self-adhering compound and release film and sanded on the bottom and top surfaces. Applied by mechanical attachment. Lap self-adhered or sealed with approved cold adhesive.
Soprafix Base 641	39” x 33’ (1 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane with a 5-inch wide side lap with a self-adhering compound and release film and sanded on the bottom and top surfaces. Applied by mechanical attachment. Lap self-adhered or sealed with approved cold adhesive.
Sopralene Flam 180	39" x 33' (1 sq.)	ASTM D6164	Non-woven polyester reinforced SBS modified bitumen membrane, both sides covered with a plastic burn-off film. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film).
Sopralene Flam 250	39" x 33' (1 sq.)	ASTM D6164	Non-woven polyester reinforced SBS modified bitumen membrane, both sides covered with a plastic burn-off film. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film).
Sopralene 180GR	39" x 33' (1 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane with fire retardants a sanded bottom and a mineral granules top. Applied in hot asphalt, cold applied adhesive or ribbon stripping (after removal of plastic burn-off film).
Sopralene 180 FR GR	39" x 33' (1 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane with fire retardants a sanded bottom and a mineral granules top. Applied in hot asphalt, cold applied adhesive or ribbon stripping (after removal of plastic burn-off film).
Sopralene 250 FR GR	39" x 33' (1 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane with fire retardants a sanded bottom and a mineral granules top. Applied in hot asphalt, cold applied adhesive or ribbon stripping (after removal of plastic burn-off film).
Sopralene Flam 180 GR	39" x 33' (1 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane with a plastic burn-off film on the bottom and mineral granules on the top. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film).
Sopralene Flam 180 FR GR	39" x 33' (1 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane with fire retardants a plastic burn-off film on the bottom and mineral granules on the top. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film).

Sopralene Flam 250 FR GR	39" x 33' (1 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane with fire retardants a plastic burn-off film on the bottom and mineral granules on the top. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film).
Sopralene Flam 180 FR+ GR	39" x 33' (1 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane with fire retardants a plastic burn-off film on the bottom and mineral granules on the top. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film).
Sopralene Flam 250 FR+ GR	39" x 33' (1 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane with fire retardants a plastic burn-off film on the bottom and mineral granules on the top. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film).
Sopralast 50 TV Alu	various	ASTM D6298	Fiberglass reinforced modified bitumen sheeting faced with aluminum foil. Applied by heat welding of ribbon stripping (after removal of plastic burn-off film).
Soprastar Flam	39” x 33’ (1 sq.)	ASTM D6162	Polyester reinforced SBS modified bitumen membrane with a plastic burn-off film on the bottom side and a reflective white top surface. Applied by heat welding.
Soprastar Sanded	39” x 33’ (1 sq.)	ASTM D6162	Stabilized polyester mat reinforced SBS modified bitumen membrane with a sanded bottom side and a reflective white top surface. Applied by hot asphalt or cold adhesive.
UNILAY	39" x 33' (1 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane with fire retardants and surfaced with mineral granules. Applied by mechanical attachment, heat welding or ribbon stripping (after removal of plastic burn-off film).
Elastocol 500	various	ASTM D41	Asphalt primers.
Elastocol Stick	various	ASTM D41	Asphalt primers.
ALSAN Flashing™	1.25 gallon pail or 3.75 gallon pail	Proprietary	One part polyurethane/bitumen resin, moisture cure compound.
ALSAN Polyfleece	4”, 8” or 39” wide by 50’ long	Proprietary	Non-woven polyester reinforcement used in the ALSAN Flashing system.
SBS Elastic Cement	5 gallon pail	Proprietary	Elastomeric bitumen based mastic compound.
Soprawalk	39” x 26’ (3/4 sq.)	Proprietary	Non-woven polyester reinforced modified bitumen membrane with a sanded bottom and mineral granules on the top. Applied by hot asphalt, cold adhesive or ribbon stripping.
FM Adhesive	5 gallon pail, 55 gallon drum or 350 gallon tote	Proprietary	Plastomeric bitumen based cold adhesive.

FM Adhesive (VOC)	5 gallon pail, 55 gallon drum or 350 gallon tote	Proprietary	Elastomeric bitumen based cold adhesive.
COLPLY Modified Adhesive	5 gallon pail, 55 gallon drum or 350 gallon tote	Proprietary	Elastomeric bitumen based cold adhesive.
Soprema PV Adhesive	5 gallon pail	Proprietary	A solvent free, two-component adhesive used in the application of PV laminates.
Soprastar Adhesive	5 gallon pail or 55 gallon drum	Proprietary	SBS modified bitumen based cold adhesive.

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
ACFoam-II, ACFoam-III	Polyisocyanurate foam insulation	Atlas Roofing Corporation
ISO 95+ GL	Polyisocyanurate foam insulation	Firestone Building Products Company, LLC
EnergyGuard Isocyanurate Composite	Composite polyisocyanurate insulation board	GAF Materials Corp.
EPS	Type IX 1.8 pcf. Polystyrene Insulation	Generic
XPS	Type IV 1.6 pcf. Polystyrene Insulation	Generic
High Density Wood Fiberboard	Wood fiber insulation board	Generic
Perlite Insulation	Perlite insulation board	Generic
DensDeck, DensDeck Prime, DensDeck DuraGuard Fireguard Type X Gypsum Board, DensDeck DuraGuard	Water resistant gypsum board	Georgia Pacific Gypsum LLC
M-Shield	Polyisocyanurate foam insulation	Soprema, Inc.
Sopra-ISO r	Polyisocyanurate foam insulation	Soprema, Inc.
H-Shield	Polyisocyanurate foam insulation	Hunter Panels LLC
ENRGY 3, ENRGY 3 25 PSI	Polyisocyanurate foam insulation	Johns Manville Corp.
Multi-Max 3, Multi-Max FA-3	Polyisocyanurate foam insulation	RMax Operating, LLC
SECUROCK Gypsum-Fiber Roof Board	Gypsum board	USG Corp.
Structodek High Density Fiberboard Roof Insulation	High Density wood fiber insulation board	Blue Ridge Fiberboard, Inc.
Fesco Board	Expanded mineral fiber insulation	Johns Manville Corp.
Sopraboard	Mineral fortified asphaltic cored coverboard	Soprema, Inc.
Sopra-ISO s, Sopra-ISO+ s	Polyisocyanurate foam insulation	Soprema, Inc.

APPROVED FASTENERS: TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	Tri-Fix Fastening System	Fastening system for base sheet attachment to lightweight concrete, gypsum or cementitious wood fiber decks.	3" diameter plate with various length fasteners	Soprema, Inc.
2.	Soprema #12, #14 & #15 Fasteners	Fasteners for membrane or insulation attachment to wood, steel or concrete decks.		Soprema, Inc.
3.	Dekfast #12, #14 & #15 HS Fastener	Insulation fastener		SFS Intec, Inc.
4.	Dekfast Galvalume Steel Hex Plate	Galvalume AZ50 steel plate	2 7/8" x 3 ¼"	SFS Intec, Inc.
5.	OMG AccuTrac Hextra Fastener	Insulation fastener for wood and steel.		OMG, Inc.
6.	OMG AccuTrac Plate	Galvalume square stress plate	3" square	OMG, Inc.
7.	OMG 3" Galvalume Steel Plate	Galvalume stress plate.	3" round	OMG, Inc.
8.	OMG Fastener #12, #14 & #15	Insulation fastener.		OMG, Inc.
9.	OMG 3 in. Round Metal Plates	Galvalume AZ50 steel plate	3" round	OMG, Inc.
10.	Trufast TL Fastener	Insulation fastener for lightweight concrete, CWF and gypsum decks		Altenloh, Brinck & Co. U.S., Inc.
11.	Trufast #14 HD Fastener	Insulation fastener for wood, steel and concrete.		Altenloh, Brinck & Co. U.S., Inc.
12.	Trufast #15 EHD Fastener	Insulation fastener for wood, steel and concrete.		Altenloh, Brinck & Co. U.S., Inc.
13.	Trufast 3" Metal Insulation Plate	Galvalume AZ50 steel plate	3" round	Altenloh, Brinck & Co. U.S., Inc.
14.	OMG Polymer Batten Strip-TL	Modified polymer batten bar		OMG, Inc.
15.	Dekfast Galvalume Steel 3" Round Insulation Plate	Galvalume AZ50 steel plate	3" round	SFS Intec, Inc.
16.	Dekfast Coiled Batten Strip	Batten bar		SFS Intec, Inc.

APPROVED FASTENERS: TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
17.	Soprema 3” Round Insulation Plate	Stress plate	3” diameter	Soprema, Inc.
18.	Soprafix 2” SB Stress Plate	Stress plate	2” diameter	Soprema, Inc.
19.	Soprafix 2-3/8” SB Stress Plate	Stress plate	2-3/8” diameter	Soprema, Inc.
20.	Soprafix MBB-R	Metal Batten Bar		Soprema, Inc.
21.	Soprema #12 DP, #14 MP, #15 HD Fastener	Insulation and membrane fasteners		Soprema, Inc.
22.	Trufast Flat Batten Bar	Galvalume AZ55 steel batten bar		Altenloh, Brinck & Co. U.S., Inc.
23.	Trufast Recessed Batten Bar	Galvalume AZ55 steel batten bar with recessed holes		Altenloh, Brinck & Co. U.S., Inc.
24.	#15 Roofgrip Large Head	Carbon steel fasteners used in steel, wood and concrete decks	Various	OMG, Inc.
25.	Dekfast IF-2-SB	Galvalume AZ55 steel plate	2” round	SFS Intec, Inc.
26.	Dekfast Galvalume Steel Round 2-3/8” 20 ga. Barbed plates	Galvalume AZ55 steel barbed plate	2.37” Round	SFS Intec, Inc.
27.	Trufast 2” Barbed Metal Stress Plates	Galvalume steel stress plate	2” Round	Altenloh, Brinck & Co. U.S., Inc.
28.	Trufast 2.4” Barbed Seam Plates	Galvalume steel stress plate	2.4” Round	Altenloh, Brinck & Co. U.S., Inc.
29.	Soprema 2" Seam Plate	Stress plate	2” diameter	Soprema, Inc.
30.	Soprema 3" Metal Insulation Plate	Stress plate	3” diameter	Soprema, Inc.
31.	Flat Bottom Metal Plate	Galvalume stress plate.	3” square	OMG, Inc.

APPROVED SURFACING/COATING OPTIONS:

TABLE 4

Chosen components must be applied according to manufacturer's application instructions. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

System Number	Manufacturer	Application
1.	Generic	Gravel applied at 400 lbs./sq., adhered with flood coat of asphalt at 60 lbs./sq.
2.	Generic	Slag applied at 300 lbs./sq., adhered with flood coat of asphalt at 60 lbs./sq.
3.	Soprema, Inc.	Gravel applied at 400 lbs./sq., adhered with FM Adhesive, FM Adhesive (VOC), COLPLY Modified Adhesive or Soprastar Adhesive at 4 gal./sq.
4.	Karnak Corporation	Karnak #97 Fibrated Aluminum Roof Coating applied at an application rate of 1.5 gal./sq.
5.	Soprema, Inc.	Cural Aluminizer applied at an application rate of 2 gal./sq.
6.	Thermo Manufacturing Systems, LLC	Super Prep Roof Coating applied in two coats at an application rate of 1.5 gal./sq./coat.
7.	United Coatings Manufacturing Company	Roof Mate Coating, applied in one base coat at a rate of 1.5 gal./sq. and one finish coat at a rate of 1.5 gal./sq.
8.	Insulating Coatings Corporation	Astec 2000 Finish Coat applied in two base coats at a rate of 0.75 gal./sq./coat and two finish coats at a rate of 0.75 gal./sq./coat.
9.	Henry Company	HE280DC White Elastomeric Roof Coating applied in two coats at an application rate of 1 gal./sq./coat.
10.	National Coating Corp.	Acryshield® A500 applied in two coats at an application rate of 1 gal./sq./coat.
11.	Soprema, Inc.	R-Nova Roof Coating.
12.	Generic	Semi-ceramic coated colored granules.

EVIDENCE SUBMITTED:

Test Agency/Identifier	Report	Name	Date
Dynatech Engineering Corp.	2491-04.95	TAS 114	01/04/95
Factory Mutual Research Corp.	1Z3A6.AM	FM 4470	04/27/95
	1D4A3.AM	FM 4470	04/24/98
	3002351	FM 4470	02/28/03
	3017614	FM 4470	02/27/06
	3026028	FM 4470	05/25/06
	3029098	FM 4470	10/25/07
	3032109	FM 4470	07/21/08
	3001445	FM 4470	02/05/99
	3X3A7.AM	FM 4470	09/08/94
	3045101	FM 4470	11/05/12
Underwriters Laboratories	R11436	UL 790	06/18/13
Exterior Research & Design, LLC	2003.02.97-1	TAS 114	02/15/97
	2003-2.04.97-1	TAS 114	04/15/97
	2002.07.97-1	TAS 114	08/15/97
	2716.05.98-1	TAS 114	05/27/98
	2752.02LAB.05.02-1	TAS 114	05/24/02
	2109.09.02	TAS 114	09/19/02
	2764.09.03	TAS 114	09/16/03
Trinity | ERD	2774.04.05-R1	TAS 114	04/18/07
	2779.11.05-R1	TAS 114	04/18/07
	S6740.11.07	ASTM D6163	11/02/07
	S12370.03.09-1	ASTM D6164	03/06/09
	S12370.03.09-2	ASTM D6164	03/06/09
	S12370.03.09-3	ASTM D6162	03/06/09
	S11440.06.10	ASTM D4798 & TAS 110	06/01/10
	S11440.01.11-R1	ASTM D6164	06/07/12
	S11440.11.10-4	ASTM D2178	11/17/10
	S11440.11.10-3-R1	ASTM D4601	01/30/13
	S11440.12.10-1-R1	ASTM D6163	06/07/12
	S32700.12.10	ASTM D6162	12/15/10
	S30440.03.10-2-R2	FM 4470 & TAS 114	06/01/10
	S35860.12.11-1	ASTM D2178	12/12/11
	S35860.12.11-2	ASTM D4601	12/12/11
	S35860.05.12-1-R1	ASTM D6163	06/07/12
	S35860.05.12-2-R1	ASTM D6164	06/07/12
	S35860.05.12-3	ASTM D6164	05/08/12
PRI Construction Materials Technologies, LLC	SOP-049-02-01	ASTM D1644 /D2196	05/31/12
	SOP-043-02-01	ASTM D4601	02/27/12
	SOP-042-02-01	ASTM D4601	02/27/12
	SOP-041-02-01	ASTM D2178	02/27/12
	SOP-040-02-01	ASTM D2178	02/27/12
	SOP-010-02-01.03	TAS-138	07/26/11
	SOP-050-02-01	ASTM D3019	07/12/12

APPROVED ASSEMBLIES:

Membrane: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel Grade 80 steel fastened 6" o.c. with Traxx/5 fasteners to steel supports spaced maximum 5 ft. o.c. Deck side laps fastened with Traxx/1 fasteners spaced at 20" o.c.

System Type B(1): Base layer of insulation mechanically fastened, optional top layer adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ACFoam-II, ACFoam-III, Sopra-ISO s, Sopra-ISO+ s, ENRGY 3, ENRGY 3 25 PSI, H-Shield, M-Shield, Sopra-ISO r (flat or tapered)		
Minimum 1.5" thick	**2, 3, 5, 8, 10 with approved plates**	**1:1.33 ft²**

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Approved High Density Wood Fiberboard, Structodek High Density Fiberboard Roof Insulation		
Minimum ½" thick	**N/A**	**N/A**
Fesco Board		
Minimum ¾" thick	**N/A**	**N/A**

Note: Apply optional top layer of insulation shall be adhered with approved hot asphalt within the EVT range and at a rate of 20-40 lbs./100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as the base layer shall only be used as the base layer with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: (Optional) One or more plies of Sopra G, Modified Sopra G, Sopra-IV, Sopra-VI, or Soprabase adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: (Optional)	**(Required if no base sheet used)** One or more plies of Elastophene Flam*, Elastophene Flam 2.2*, Sopralene Flam 180*, Sopralene Flam 250*, Sopralene 180 SP, Sopralene 250 SP, heat welded. Or One or more plies of Elastophene Sanded, Elastophene 180 Sanded, Sopralene 180 Sanded 2.2, Elastophene PS*, Elastophene PS 3.0*, Elastophene 180 PS*, Sopralene 180 PS 2.2*, Sopralene 180 PS*, Sopralene 180 Sanded, Sopralene 250 Sanded or one or more plies of Type IV or Type VI ply sheets, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. *Requires heat welded cap membrane.
Membrane:	Elastophene Flam GR, Elastophene Flam FR GR, Elastophene Flam FR+ GR, Elastophene Flam LS FR GR, Soprastar Flam, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 250 FR GR, Sopralene Flam 180 FR+ GR, Sopralene Flam 250 FR+ GR, Sopralast 50 TV Alu, heat welded Or Soprastar Sanded, Elastophene FR GR, Elastophene FR+ GR, Elastophene LS FR GR, Elastophene GR, Sopralene 180 FR GR, Sopralene 250 FR GR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. to sand surfaced base or ply membrane.
Surfacing:	Surfacing is Optional on granular surfaced field cap membranes. Surfacing is Required for smooth or sanded surfaced field cap membranes. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.
Maximum Design Pressure:	-67.5 psf. (For Fesco Board) (See General Limitation #7) -75 psf. (For High Density Wood Fiberboard) (See General Limitation #7)

Membrane: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga., 1.5 in. (38mm) deep, ASTM A653 or A1008 Grade 80 steel deck fastened 6" o.c. with Traxx/5 fasteners into steel supports spaced maximum 6 ft. o.c. Deck side laps are attached with Traxx/1 fasteners spaced max. 30" o.c.

System Type B(2): Base layer of insulation mechanically attached, top layer adhered with approved asphalt

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ACFoam-II, ACFoam-III, Sopra-ISO s, Sopra-ISO+ s, H-Shield, M-Shield, Sopra-ISO r (flat or tapered)		
Minimum 2" thick	**11 (min #14)**	**1:1.6**

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Approved High Density Wood Fiberboard		
Minimum ½" thick	**N/A**	**N/A**

Note: Apply optional top layer of insulation shall be adhered with approved hot asphalt within the EVT range and at a rate of 20-40 lbs./100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as the base layer shall only be used as the base layer with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Primer: (Optional) Elastocol 500, Elastocol Stick or AquaTac applied at a rate of 1 gal./sq., to top surface of any insulation, base or ply sheet prior to application of next layer.

Base Sheet: One or more plies of Sopra G, Modified Sopra G, Sopra-IV, Sopra-VI, Soprabase, Elastophene Sanded 3.0, Elastophene HS Sanded, Elastophene PS*, Elastophene PS 3.0*, Elastophene 180 Sanded, Sopralene 180 Sanded 2.2, Elastophene 180 PS*, Sopralene 180 Sanded, Sopralene 180 PS*, Sopralene 250 Sanded, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
*Requires heat welded ply or cap membrane.

Ply Sheet: (Optional)	One or more layers of Elastophene Flam*, Elastophene Flam 2.2*, Elastophene Flam HS*, Elastophene SP, Elastophene SP 3.0, Sopralene Flam 180*, Sopralene 180 SP 3.5, Soprafix, Soprafix Base 622. Sopralene Flam 250*, Sopralene 250 SP, heat welded Or Elastophene Sanded, Elastophene Sanded 3.0, Elastophene HS Sanded, Elastophene PS*, Elastophene PS 3.0*, Elastophene 180 Sanded, Sopralene 180 Sanded 2.2, Elastophene 180 PS*, Sopralene 180 PS 2.2*, Sopralene 180 Sanded, Sopralene 180 PS*, Sopralene 250 Sanded, adhered in hot asphalt at 25 lbs./sq. to sand surfaced base membrane. *Requires heat welded cap membrane.
Membrane:	Elastophene Flam GR, Elastophene Flam FR GR, Elastophene Flam LS FR GR, Elastophene Flam FR+ GR, Elastophene Flam HS FR GR, Soprastar Flam, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 180 FR+ GR, Sopralene Flam 250 FR GR, Sopralene Flam 250 FR+ GR, Sopralast 50 TV Alu, heat welded Or Elastophene GR, Elastophene FR GR, Elastophene LS FR GR, Elastophene FR+ GR, Elastophene HS FR GR, Soprastar Sanded, Sopralene 180 FR GR, Sopralene 250 FR GR, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. to sand surfaced base or ply membrane.
Surfacing:	Surfacing is Optional on granular surfaced field cap membranes. Surfacing is Required for smooth or sanded surfaced field cap membranes. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.
Maximum Design Pressure:	-75 psf. (See General Limitation #7.)

Membrane: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. Type B, Grade 33 steel fastened 6" o.c. with Traxx/5 fasteners to supports spaced 5 ft. o.c. Deck side laps fastened with Traxx/1 fasteners spaced at 20" o.c.

System Type C(1): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ACFoam-II, ACFoam-III, Sopra-ISO s, Sopra-ISO+ s, ENRGY 3, ENRGY 3 25 PSI, Multi-Max FA-3, H-Shield, M-Shield, Sopra-ISO r (flat or tapered)		
Minimum 1.5" thick	**N/A**	**N/A**

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
DensDeck		
Minimum ¼" thick	**2, 3, 5, 8, or 10**	**1:2 ft²**
Approved High Density Wood Fiberboard		
Minimum ½" thick	**2, 3, 5, 8, or 10**	**1:2 ft²**

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: (Optional) One or more plies of Sopra G, Modified Sopra G, Sopra-IV, Sopra-VI, Soprabase, adhered in CIM 162 Adhesive or Soprema PV Adhesive applied at a rate of 1.5 gal./sq.

Ply Sheet: (Optional) **(Required if no base sheet used)** One or more plies of Elastophene Sanded, Elastophene 180 Sanded, Sopralene 180 Sanded 2.2, Sopralene 180 Sanded, Sopralene 250 Sanded, or one or more plies of Type IV or Type VI ply sheets adhered in CIM 162 Adhesive or Soprema PV Adhesive applied at a rate of 1.5 gal./sq.

Membrane: Soprastar Sanded, Elastophene FR GR, Elastophene FR+ GR, Elastophene LS FR GR, Elastophene GR, Sopralene 180 FR GR, Sopralene 250 FR GR adhered in CIM 162 Adhesive or Soprema PV Adhesive applied at a rate of 1.5 gal./sq.

Surfacing: Surfacing is Optional on granular surfaced field cap membranes.
Surfacing is Required for smooth or sanded surfaced field cap membranes.
Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications
Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

Maximum Design Pressure: -52.5 psf. (See General Limitation #7)

Membrane: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. Steel, Grade 80 steel decking over ¼" thick steel supports spaced at maximum 6 ft. o.c. attached with Traxx/5 fasteners at a spacing of 6" o.c. Deck side laps are attached 30" o.c. using Traxx/1 fasteners.

System Type C(2): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft²**
ACFoam-II, ACFoam-III, Sopra-ISO s, Sopra-ISO+ s, ENRGY 3, ENRGY 3 25 PSI, Multi-Max FA-3, H-Shield, M-Shield, Sopra-ISO r (flat or tapered)		
Minimum 1.5" thick	**N/A**	**N/A**

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft²**
DensDeck		
Minimum ¼" thick	**8**	**1:1.78 ft²**

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: (Optional) One or more plies of Sopra G, Modified Sopra G, Sopra-IV, Sopra-VI, Soprabase, adhered in full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

*Requires heat welded ply or cap membrane.

Ply Sheet: (Optional) **(Required if no base sheet used)** One or more plies of Elastophene Flam*, Elastophene Flam 2.2*, Sopralene Flam 180*, Sopralene Flam 250*, Sopralene 180 SP, Sopralene 250 SP, heat welded

Or

One or more plies of Elastophene Sanded, Elastophene 180 Sanded, Sopralene 180 Sanded 2.2, Elastophene PS*, Elastophene PS 3.0*, Elastophene 180 PS*, Sopralene 180 PS 2.2*, Sopralene 180 PS*, Sopralene 180 Sanded, Sopralene 250 Sanded or one or more plies of Type IV or Type VI ply sheets, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

*Requires heat welded cap membrane.

Membrane:	Elastophene Flam GR, Elastophene Flam FR GR, Elastophene Flam FR+ GR, Elastophene Flam LS FR GR, Soprastar Flam, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 250 FR GR, Sopralene Flam 180 FR+ GR, Sopralene Flam 250 FR+ GR, Sopralast 50 TV Alu, heat welded Or Soprastar Sanded, Elastophene FR GR, Elastophene LS FR GR, Elastophene GR, Elastophene FR+ GR, Sopralene 180 FR GR, Sopralene 250 FR GR, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. to sand surfaced base or ply membrane.
Surfacing:	Surfacing is Optional on granular surfaced field cap membranes. Surfacing is Required for smooth or sanded surfaced field cap membranes. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.
Maximum Design Pressure:	-52.5 psf. (See General Limitation #7)

Membrane: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga., 1.5 in. (38mm) deep, ASTM A653 or A1008 Grade 80 steel deck fastened 6" o.c. with Traxx/5 fasteners into steel supports spaced maximum 6 ft. o.c. Deck side laps are attached with Traxx/1 fasteners spaced max. 30" o.c.

System Type C(3): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ACFoam-II, ACFoam-III, Sopra-ISO s, Sopra-ISO+ s, ENRGY 3, H-Shield, M-Shield, Sopra-ISO r, Multi-Max FA-3 (flat or tapered)		
Minimum 1.4" thick	**N/A**	**N/A**

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
DensDeck		
Minimum ¼" thick	**2(#14)**	**1:1.78**

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Refer to Roofing Application Standard RAS 117 for insulation attachment.

Primer: (Optional) Elastocol 500, Elastocol Stick or AquaTac applied at a rate of 1 gal./sq., to top surface of any insulation, base or ply sheet prior to application of next layer

Base Sheet: (Optional) One or two plies of Sopra G, Modified Sopra G, Sopra IV, Sopra VI, Soprabase, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or in FM Adhesive, FM Adhesive (VOC), COLPLY Modified Adhesive or Soprastar Adhesive at 1.5 – 2.0 gallons/square.

Ply Sheet: (Optional) **(Required if no base sheet used)** One ply of Elastophene Flam*, Elastophene Flam 2.2*, Elastophene Flam HS*, Elastophene SP, Elastophene SP 3.0, Sopralene Flam 180*, Sopralene 180 SP 3.5, Soprafix, Soprafix Base 622, Sopralene Flam 250*, Sopralene 250 SP, heat welded

Or

One ply of Elastophene Sanded, Elastophene Sanded 3.0, Elastophene HS Sanded, Elastophene PS*, Elastophene PS 3.0*, Elastophene 180 Sanded, Sopralene 180 Sanded 2.2, Elastophene 180 PS*, Sopralene 180 PS 2.2*, Sopralene 180 Sanded, Sopralene 180 PS*, Sopralene 250 Sanded, or one to three plies of ASTM D2178 Type IV or VI ply sheet, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or in FM Adhesive, FM Adhesive (VOC), COLPLY Modified Adhesive or Soprastar Adhesive at 1.5 – 2.0 gallons/square.

*Requires heat welded cap membrane.

Membrane:	Elastophene Flam GR, Elastophene Flam FR GR, Elastophene Flam LS FR GR, Elastophene Flam FR+ GR, Elastophene Flam HS FR GR, Soprastar Flam, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 180 FR+ GR, Sopralene Flam 250 FR GR, Sopralene Flam 250 FR+ GR, Sopralast 50 TV Alu, heat welded Or Elastophene GR, Elastophene FR GR, Elastophene LS FR GR, Elastophene FR+ GR, Elastophene HS FR GR, Soprastar Sanded, Sopralene 180 FR GR, Sopralene 250 FR GR, adhered in hot asphalt at 25 lbs./sq. or in FM Adhesive, FM Adhesive (VOC), COLPLY Modified Adhesive or Soprastar Adhesive at 1.5 – 2.0 gallons/square to sand surfaced base or ply membrane.
Surfacing:	Surfacing is Optional on granular surfaced field cap membranes. Surfacing is Required for smooth or sanded surfaced field cap membranes. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.
Maximum Design Pressure:	-60 psf. (See General Limitation #7.)

Membrane: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga., steel deck fastened 6" o.c. with Traxx/5 fasteners to supports spaced maximum deck spans of 6 ft. o.c. Deck side laps are attached with Traxx/5 screws spaced 6" o.c.

System Type C(4): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ACFoam-II, Sopra-ISO s, H-Shield, M-Shield, Sopra-ISO r, ISO 95+ GL, ENRGY 3		
Minimum 2" thick	**N/A**	**N/A**

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
SECUROCK Gypsum-Fiber Roof Board		
Minimum ½" thick (4'x8')	**3, 7, 11, 12**	**1: 1.78**

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Refer to Roofing Application Standard RAS 117 for insulation attachment.

Primer: (Optional) Elastocol 500, Elastocol Stick or AquaTac applied at a rate of 1 gal./sq., to top surface of any insulation, base or ply sheet prior to application of next layer

Base Sheet: One or more plies of Elastophene Sanded, Elastophene Sanded 3.0, Elastophene HS Sanded, Elastophene PS*, Elastophene PS 3.0*, Elastophene 180 Sanded, Sopralene 180 Sanded 2.2, Elastophene 180 PS*, Sopralene 180 PS 2.2*, Sopralene 180 Sanded, Sopralene 180 PS*, Sopralene 250 Sanded, adhered in hot asphalt at 25 lbs./sq.

*Requires heat welded ply or cap membrane.

Ply Sheet: (Optional) One or more layers of Elastophene Flam*, Elastophene Flam 2.2*, Elastophene Flam HS*, Elastophene SP, Elastophene SP 3.0, Sopralene Flam 180*, Sopralene 180 SP 3.5, Soprafix, Soprafix Base 622, Sopralene Flam 250*, Sopralene 250 SP, heat welded.
Or
Elastophene Sanded, Elastophene Sanded 3.0, Elastophene HS Sanded, Elastophene PS*, Elastophene PS 3.0*, Elastophene 180 Sanded, Sopralene 180 Sanded 2.2, Elastophene 180 PS*, Sopralene 180 PS 2.2*, Sopralene 180 Sanded, Sopralene 180 PS*, Sopralene 250 Sanded, adhered in hot asphalt at 25 lbs./sq. to sand surfaced base membrane.
*Requires heat welded cap membrane.

Membrane:	One layer of Elastophene Flam GR, Elastophene Flam FR GR, Elastophene Flam LS FR GR, Elastophene Flam FR+ GR, Elastophene Flam HS FR GR, Soprastar Flam, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 180 FR+ GR, Sopralene Flam 250 FR GR, Sopralene Flam 250 FR+ GR, Sopralast 50 TV Alu, heat welded. Or One layer of Elastophene GR, Elastophene FR GR, Elastophene LS FR GR, Elastophene FR+ GR, Elastophene HS FR GR, Soprastar Sanded, Sopralene 180 FR GR, Sopralene 250 FR GR, adhered in hot asphalt at 25 lbs./sq. to sand surfaced base or ply membrane.
Surfacing:	Surfacing is Optional on granular surfaced field cap membranes. Surfacing is Required for smooth or sanded surfaced field cap membranes. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.
Maximum Design Pressure:	-60 psf. (See General Limitation #7.)

Membrane: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga., Type B, Grade 33 steel deck fastened 6" o.c. with Traxx/5 fasteners to supports spaced maximum deck spans of 6 ft. o.c. Deck side laps are attached with Traxx/1 screws spaced 24" o.c.

System Type C(5): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Any approved polyisocyanurate or EPS or XPS listed in Table 2 Minimum 1" thick	**N/A**	**N/A**

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Sopraboard Minimum 1/8" thick	**2, 3, 8, 11, 12**	**1: 2**

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Refer to Roofing Application Standard RAS 117 for insulation attachment.

Primer: (Optional) Elastocol 500, Elastocol Stick or AquaTac applied at a rate of 1 gal./sq., to top surface of any insulation, base or ply sheet prior to application of next layer

Base Sheet: One or more plies of Sopra G, Modified Sopra G, Elastophene Sanded, Elastophene Sanded 3.0, Elastophene HS Sanded, Elastophene PS*, Elastophene PS 3.0*, Elastophene 180 Sanded, Elastophene 180 PS*, Sopralene 180 PS 2.2*, Sopralene 180 Sanded, Sopralene 180 Sanded 2.2, Sopralene 180 PS 3.5*, Sopralene 250 Sanded, adhered in hot asphalt at 25 lbs./sq.

Or

Elastophene Flam*, Elastophene Flam 2.2*, Elastophene Flam HS*, Elastophene SP, Elastophene SP 3.0, Sopralene Flam 180*, Sopralene 180 SP 3.5, Sopralene Flam 250*, Sopralene 250 SP, heat welded.

*Requires heat welded ply or cap membrane.

Ply Sheet: (Optional)	One or more plies of Sopra-IV, Sopra-VI or any approved ASTM D2178 Type IV or VI ply sheet, Elastophene Sanded, Elastophene Sanded 3.0, Elastophene HS Sanded, Elastophene PS*, Elastophene PS 3.0*, Elastophene 180 Sanded, Elastophene 180 PS*, Sopralene 180 PS 2.2*, Sopralene 180 Sanded, Sopralene 180 Sanded 2.2, Sopralene 180 PS 3.5*, Sopralene 250 Sanded, adhered in hot asphalt at 25 lbs./sq. to sand surfaced base membrane. Or Elastophene Flam*, Elastophene Flam 2.2*, Elastophene Flam HS*, Elastophene SP, Elastophene SP 3.0, Sopralene Flam 180*, Sopralene 180 SP 3.5, Sopralene Flam 250*, Sopralene 250 SP, heat welded. *Requires heat welded cap membrane.
Membrane:	Elastophene Flam GR, Elastophene Flam FR GR, Elastophene Flam LS FR GR, Elastophene Flam FR+ GR, Elastophene Flam HS FR GR, Soprastar Flam, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 180 FR+ GR, Sopralene Flam 250 FR GR, Sopralene Flam 250 FR+ GR, Sopralast 50 TV Alu, heat welded. Or Elastophene GR, Elastophene FR GR, Elastophene LS FR GR, Elastophene FR+ GR, Elastophene HS FR GR, Soprastar Sanded, Sopralene 180 FR GR, Sopralene 250 FR GR, adhered in hot asphalt at 25 lbs./sq. to sand surfaced base or ply membrane.
Surfacing:	Surfacing is Optional on granular surfaced field cap membranes. Surfacing is Required for smooth or sanded surfaced field cap membranes. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.
Maximum Design Pressure:	-60 psf. (See General Limitation #7.)

Membrane: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga., Type B, Grade 33 steel deck fastened 6" o.c. with Traxx/5 fasteners to supports spaced maximum deck spans of 6 ft. o.c. Deck side laps are attached with Traxx/1 screws spaced 24" o.c.

System Type C(6): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Any approved polyisocyanurate or EPS or XPS listed in Table 2 Minimum 1" thick	**N/A**	**N/A**

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Sopraboard Minimum 1/8" thick	**2, 3, 8, 11, 12**	**1: 2**

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Refer to Roofing Application Standard RAS 117 for insulation attachment.

Primer: (Optional) Elastocol 500, Elastocol Stick or AquaTac applied at a rate of 1 gal./sq., to top surface of any insulation, base or ply sheet prior to application of next layer

Base Sheet: One or more plies of Sopralene 180 Sanded, Elastophene 180 Sanded, Sopralene 180 Sanded 2.2, Sopralene 180 PS 3.5*, Sopralene 250 Sanded, adhered in hot asphalt at 25 lbs./sq.

Or

Sopralene Flam 180*, Sopralene 180 SP 3.5, Sopralene Flam 250*, Sopralene 250 SP, heat welded.

*Requires heat welded ply or cap membrane.

Ply Sheet: (Optional) Sopralene 180 Sanded, Elastophene 180 Sanded, Sopralene 180 Sanded 2.2, Sopralene 180 PS 3.5*, Sopralene 250 Sanded, adhered in hot asphalt at 25 lbs./sq. to sand surfaced base membrane.

Or

Sopralene Flam 180*, Sopralene 180 SP 3.5, Sopralene Flam 250*, Sopralene 250 SP, heat welded.

*Requires heat welded cap membrane.

Membrane:	Soprastar Flam, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 180 FR+ GR, Sopralene Flam 250 FR GR, Sopralene Flam 250 FR+ GR, heat welded. Or Soprastar Sanded, Sopralene 180 FR GR, Sopralene 250 FR GR, adhered in hot asphalt at 25 lbs./sq. to sand surfaced base or ply membrane.
Surfacing:	Surfacing is Optional on granular surfaced field cap membranes. Surfacing is Required for smooth or sanded surfaced field cap membranes. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.
Maximum Design Pressure:	-67.5 psf. (See General Limitation #7.)

Membrane: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 22 ga., Type B, Grade 80 steel deck fastened 6" o.c. with Traxx/5 fasteners to supports spaced maximum deck spans of 6 ft. o.c. Deck side laps are attached with Traxx/1 screws spaced 24" o.c.

System Type C(7): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ACFoam-II, Sopra-ISO s Minimum 1.5" thick	**N/A**	**N/A**

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
SECUROCK Gypsum-Fiber Roof Board Minimum 1/2" thick	**11 with 13 or 21 (#14) with 30**	**1: 1.33**

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: Sopralene 180 SP, heat welded.

Membrane: Soprastar Sanded adhered in Soprema PV Adhesive at a rate of 2 gal./sq. to sand surfaced base or ply membrane.

Surfacing: Surfacing is Optional on granular surfaced field cap membranes.
Surfacing is Required for smooth or sanded surfaced field cap membranes.
Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications
Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

Maximum Design Pressure: -67.5 psf. (See General Limitation #7.)

Membrane: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 22 ga., Type B, Grade 80 steel deck fastened 6" o.c. with Traxx/5 fasteners to supports spaced maximum deck spans of 6 ft. o.c. Deck side laps are attached with Traxx/1 screws spaced 24" o.c.

System Type C(8): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ACFoam-II, Sopra-ISO s Minimum 1.5" thick	**N/A**	**N/A**

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
SECUROCK Gypsum-Fiber Roof Board Minimum 1/2" thick	**12 with 13 or 21 (#15) with 30**	**1: 1.33**

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: Sopralene 180 SP, heat welded.

Membrane: Soprastar Sanded adhered in Soprastar Adhesive, FM Adhesive (VOC) or COLPLY Modified Adhesive at a rate of 1.5 gal./sq. to sanded surfaced base or ply membrane.

Surfacing: Surfacing is Optional on granular surfaced field cap membranes.
Surfacing is Required for smooth or sanded surfaced field cap membranes.
Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications
Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

Maximum Design Pressure: -75 psf. (See General Limitation #7.)

Membrane: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel Grade 80 steel fastened 6" o.c. with Traxx/5 fasteners to steel supports spaced maximum 5 ft. o.c. Deck side laps fastened with Traxx/1 fasteners spaced at 20" o.c.

System Type C(9): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Any Approved insulation listed in Table 2 (flat or tapered) loose laid.		

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Sopraboard Minimum 1/8" thick	**3, 8, 12 (#15) or 21 (#15)**	**1: 1.25**

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Refer to Roofing Application Standard RAS 117 for insulation attachment.

Primer: (Optional) Elastocol 500, Elastocol Stick or AquaTac applied at a rate of 1 gal./sq., to top surface of any insulation, base or ply sheet prior to application of next layer

Base Sheet: One or more plies of Sopra G, Modified Sopra G, Sopra-IV, Sopra-VI, Soprabase, Elastophene Sanded, Elastophene Sanded 3.0, Elastophene HS Sanded, Elastophene PS*, Elastophene PS 3.0*, Elastophene 180 Sanded, Sopralene 180 Sanded 2.2, Elastophene 180 PS*, Sopralene 180 PS 2.2*, Sopralene 180 Sanded, Sopralene 180 PS*, Sopralene 250 Sanded, adhered in a full mopping of approved asphalt, applied within the EVT range and at a rate of 20-40 lbs./sq.

Or

Elastophene Flam*, Elastophene Flam 2.2*, Elastophene Flam HS*, Elastophene SP, Elastophene SP 3.0, Sopralene Flam 180*, Sopralene 180 SP 3.5, Soprafix, Soprafix Base 622, Sopralene Flam 250*, Sopralene 250 SP, Colvent TG, Colvent 180 TG, heat welded.

*Requires heat welded ply or cap membrane.

Ply Sheet: (Optional)	One or more layers of Elastophene Flam*, Elastophene Flam 2.2*, Elastophene Flam HS*, Elastophene SP, Elastophene SP 3.0, Sopralene Flam 180*, Sopralene 180 SP 3.5, Soprafix, Soprafix Base 622, Sopralene Flam 250*, Sopralene 250 SP, heat welded. Or Elastophene Sanded, Elastophene Sanded 3.0, Elastophene HS Sanded, Elastophene PS*, Elastophene PS 3.0*, Elastophene 180 Sanded, Sopralene 180 Sanded 2.2, Elastophene 180 PS*, Sopralene 180 PS 2.2*, Sopralene 180 Sanded, Sopralene 180 PS*, Sopralene 250 Sanded, or one to three plies of Sopra-IV or Sopra-VI, adhered in a full mopping of approved asphalt, applied within the EVT range and at a rate of 20-40 lbs./sq. to sand surfaced base membrane. *Requires heat welded cap membrane.
Membrane:	Elastophene Flam GR, Elastophene Flam FR GR, Elastophene Flam LS FR GR, Elastophene Flam FR+ GR, Elastophene Flam HS FR GR, Soprastar Flam, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 180 FR+ GR, Sopralene Flam 250 FR GR, Sopralene Flam 250 FR+ GR, Sopralast 50 TV Alu, heat welded. Or Elastophene GR, Elastophene FR GR, Elastophene LS FR GR, Elastophene FR+ GR, Elastophene HS FR GR, Soprastar Sanded, Sopralene 180 FR GR, Sopralene 250 FR GR, adhered in hot asphalt at 25 lbs./sq. or in FM Adhesive, FM Adhesive (VOC), COLPLY Modified Adhesive or Soprastar Adhesive at 1.5 – 2.0 gallons/square to sand surfaced base or ply membrane.
Surfacing:	Surfacing is Optional on granular surfaced field cap membranes. Surfacing is Required for smooth or sanded surfaced field cap membranes. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.
Maximum Design Pressure:	-90 psf. (See General Limitation #7.)

Membrane: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. 1.5 in. (38mm) deep, ASTM A653 or A1008 Grade 80 steel deck fastened 6" o.c. with Traxx/5 fasteners to supports spaced 6 ft. o.c. Side laps are fastened with Traxx/1 fasteners spaced 30 in. o.c.

System Type D(1): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.
One or more layers of any of the following insulations.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ACFoam-II, ACFoam-III, Sopra-ISO s, Sopra-ISO+ s, ENRGY 3, Multi-Max FA-3, H-Shield, M-Shield, Sopra-ISO r (flat or tapered)		
Minimum 1.4" thick	**N/A**	**N/A**
(Optional) Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Approved High Density Wood Fiberboard, Structodek High Density Fiberboard		
Minimum ½" thick	**N/A**	**N/A**
Fesco Board		
Minimum ¾" thick	**N/A**	**N/A**
DensDeck		
Minimum ¼" thick	**N/A**	**N/A**
DensDeck DuraGuard Fireguard Type X Gypsum Board		
Minimum ⅝" thick	**N/A**	**N/A**

Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Soprafix, Soprafix Base 622, Soprafix [S]*, Soprafix Base 612*, Soprafix [X]*, Soprafix Base 614*, Sopralene Flam 180* or Sopralene Flam 250* fastened to the deck as described below:

*Requires heat welded ply or cap membrane**.**

Fastening #1: Attach base sheet using SFS Dekfast #14 fasteners or Soprema #14 fasteners with Soprafix 2" SB Stress Plates spaced 18" o.c. in a 4" wide heat welded or bituminous taped seam.
(Meets Maximum Design Pressure of –45 psf; See General Limitation #9.)

Fastening #2: Attach base sheet using SFS Dekfast #14 fasteners with Dekfast Galvalume Steel 3 in. Round Insulation Plates spaced 24" o.c. in the center of the sheet. Laps are heat welded. Fastener rows are stripped in with a 7" wide section of heat welded base sheet membrane.
(Meets Maximum Design Pressure of –45 psf; See General Limitation #9.)

Fastening #3:	(Limited to use of Soprafix[X], Soprafix Base 614 and Sopralene Flam 250 Membranes only.) Attach base sheet using SFS Dekfast #15 HS Fastener or Soprema #15 Fasteners and 70 mm Round Plates spaced 12" o.c. in a 6" wide heat welded lap. ***(Meets Maximum Design Pressure of –97.5 psf; See General Limitation #7.)***
Fastening #4:	Attach base sheet using Soprema #14 Fasteners and Soprafix 2" SB Stress Plates s spaced 12" o.c. in a 5" wide heat welded lap. ***(Meets Maximum Design Pressure of –60 psf; See General Limitation #7.)***
Ply Sheet: (Optional)	One or more plies of Elastophene Flam*, Elastophene Flam 2.2*, Sopralene Flam 180*, Sopralene Flam 250*, Sopralene 180 SP, Sopralene 250 SP, heat welded *Requires heat welded cap membrane.
Membrane:	Elastophene Flam GR, Elastophene Flam FR GR, Elastophene Flam FR+ GR, Elastophene Flam LS FR GR, Soprastar Flam, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 250 FR GR, Sopralene Flam 180 FR+ GR, Sopralene Flam 250 FR+ GR, Sopralast 50 TV Alu, heat welded.
Surfacing:	Surfacing is Optional on granular surfaced field cap membranes. Surfacing is Required for smooth or sanded surfaced field cap membranes. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.
Maximum Design Pressure:	See Fastening Requirements above.

Membrane: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type D(2): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ACFoam-II, ACFoam-III, Sopra-ISO s, Sopra-ISO+ s, ENRGY 3, Multi-Max FA-3, H-Shield, M-Shield, Sopra-ISO r (flat or tapered)		
Minimum 1.5" thick	**N/A**	**N/A**
(Optional) Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Approved High Density Wood Fiberboard, Structodek High Density Fiberboard		
Minimum ½" thick	**N/A**	**N/A**
Fesco Board		
Minimum ¾" thick	**N/A**	**N/A**
DensDeck, SECUROCK Gypsum-Fiber Roof Board		
Minimum ¼" thick	**N/A**	**N/A**
Sopraboard		
Minimum 1/8" thick	**N/A**	**N/A**
DensDeck DuraGuard Fireguard Type X Gypsum Board		
Minimum ⅝" thick	**N/A**	**N/A**

Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Sopra G, Modified Sopra G, Soprabase, Soprabase S, Soprabase TG fastened to the deck as described below:

Fastening: Attach base sheet using SFS #14 Dekfast with Dekfast Galvalume Steel Hex Plates spaced 9" o.c. in a 4" lap and 12" o.c. in two staggered rows in the center of the sheet.

Ply Sheet: (Optional) One or more plies of Elastophene Flam*, Elastophene Flam 2.2*, Sopralene Flam 180*, Sopralene Flam 250*, Sopralene 180 SP, Sopralene 250 SP, heat welded Or

Ply Sheet: (Optional) (Cont.)	One or more plies of Elastophene Sanded, Elastophene 180 Sanded, Sopralene 180 Sanded 2.2, Elastophene PS*, Elastophene PS 3.0*, Elastophene 180 PS*, Sopralene 180 PS 2.2*, Sopralene 180 PS*, Sopralene 180 Sanded, Sopralene 250 Sanded or one or more plies of Type IV or Type VI ply sheets adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. to sand surfaced base membrane. *Requires heat welded cap membrane.
Membrane:	Elastophene Flam GR, Elastophene Flam FR GR, Elastophene Flam FR+ GR, Elastophene Flam LS FR GR, Soprastar Flam, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 250 FR GR, Sopralene Flam 180 FR+ GR, Sopralene Flam 250 FR+ GR, Sopralast 50 TV Alu, heat welded Or Elastophene FR GR, Elastophene FR+ GR, Elastophene LS FR GR, Elastophene GR, Soprastar Sanded, Sopralene 180 FR GR, Sopralene 250 FR GR, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. to sand surfaced base or ply membrane.
Surfacing:	Surfacing is Optional on granular surfaced field cap membranes. Surfacing is Required for smooth or sanded surfaced field cap membranes. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.
Maximum Design Pressure:	-45 psf. (See General Limitation #9)

Membrane: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga., 1.5 in. (38mm) deep, ASTM A653 or A1008 Grade 80 steel deck fastened 6" o.c. with Traxx/5 fasteners at supports spaced maximum 6 ft. o.c. Side laps are fastened with Traxx/1 fasteners spaced 24" o.c.

System Type D(3): All layers of insulation and base sheet simultaneously attached

All General and System Limitations apply.

One or more layers of any of the following insulations.

Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ACFoam-II, Sopra-ISO s, H-Shield, M-Shield, Sopra-ISO r (flat or tapered)		
Minimum 1.5" thick	**N/A**	**N/A**

Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: Soprafix, Soprafix Base 622, Soprafix [X]*, Soprafix Base 614*, Soprafix-e or Soprafix Base 641, mechanically attached with OMG Polymer Batten Strip-TL and OMG #15 Roofgrip Large Head fasteners, Trufast Recessed Batten Bar or Trufast Recessed Batten Bar and Trufast #15 EHD Fasteners or Soprafix MBB-R with Soprema #15 HD Fasteners, spaced 12" o.c. in the min. 5" lap.

*Requires heat welded ply or cap membrane.

Ply Sheet: (Optional) One or more layers of Sopralene Flam 180*, Sopralene 180 SP 3.5, Soprafix, Soprafix Base 622, Sopralene Flam 250*, Sopralene 250 SP, heat welded.

*Requires heat welded cap membrane.

Membrane: Soprastar Flam, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 180 FR+ GR, Sopralene Flam 250 FR GR, Sopralene Flam 250 FR+ GR, heat welded

Surfacing: Surfacing is Optional on granular surfaced field cap membranes.
Surfacing is Required for smooth or sanded surfaced field cap membranes.
Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications
Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

Maximum Design Pressure: -75 psf. (See General Limitation #7.)

Membrane: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. Grade 80 Steel decking fastened 6" o.c. with Traxx/5 fasteners to supports spaced maximum 6' o.c. Deck side laps are fastened 24" o.c. with Traxx/1 fasteners.

System Type D(4): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
ACFoam-II, Sopra-ISO s, H-Shield, M-Shield, Sopra-ISO r (flat or tapered)		
Minimum 1.5" thick	**N/A**	**N/A**
EnergyGuard Isocyanurate Composite, Fesco Board, Approved Perlite		
Minimum 0.75" thick	**N/A**	**N/A**

Note: Insulation layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Soprafix, Soprafix Base 622, Soprafix-e or Soprafix Base 641, fastened to the deck as described below:
*Requires heat welded ply or cap membrane.

Fastening: Attach base sheet using Trufast Recessed Batten Bar with Trufast #14 HD Fasteners or Soprafix MBB-R with Soprema #14 MP Fasteners spaced 12" o.c. in the minimum 5" wide lap.

Ply Sheet: (Optional) One or more plies of Elastophene Flam*, Elastophene Flam 2.2*, Sopralene Flam 180*, Sopralene Flam 250*, Sopralene 180 SP, Sopralene 250 SP, heat welded
*Requires heat welded cap membrane.

Membrane: Elastophene Flam GR, Elastophene Flam FR GR, Elastophene Flam FR+ GR, Elastophene Flam LS FR GR, Soprastar Flam, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 250 FR GR, Sopralene Flam 180 FR+ GR, Sopralene Flam 250 FR+ GR, Sopralast 50 TV Alu, heat welded

Surfacing: Surfacing is Optional on granular surfaced field cap membranes.
Surfacing is Required for smooth or sanded surfaced field cap membranes.
Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications
Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

Maximum Design Pressure: -75 psf. (General Limitation #7)

Membrane: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. Grade 80 Steel decking fastened 6" o.c. with Traxx/5 fasteners to supports spaced maximum 6' o.c. Deck side laps are fastened 24" o.c. with Traxx/1 fasteners.

System Type D(5): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
ACFoam-II, Sopra-ISO s, H-Shield. M-Shield, Sopra-ISO r (flat or tapered)		
Minimum 1.5" thick	**N/A**	**N/A**
EnergyGuard Isocyanurate Composite, Fesco Board, Approved Perlite		
Minimum 0.75" thick	**N/A**	**N/A**

Note: Insulation layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Soprafix, Soprafix Base 622, Soprafix-e or Soprafix Base 641, fastened to the deck as described below:

Fastening: Attach base sheet using OMG Polymer Batten Strip-TL with OMG #15 Roofgrip Large Head fasteners or Trufast Flat Batten Bar and Trufast #14 HD Fasteners, spaced 12" o.c. in the minimum 5" wide lap.

Ply Sheet: (Optional) One or more plies of Elastophene Sanded, Elastophene 180 Sanded, Sopralene 180 Sanded 2.2, Sopralene 180 Sanded, Sopralene 250 Sanded or one or more plies of Type IV or Type VI ply sheets adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. to sand surfaced base membrane.

Membrane: Soprastar Sanded, Elastophene FR GR, Elastophene FR+ GR, Elastophene LS FR GR, Elastophene GR, Sopralene 180 FR GR, Sopralene 250 FR GR, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. to sand surfaced base or ply membrane.

Surfacing: Surfacing is Optional on granular surfaced field cap membranes.
Surfacing is Required for smooth or sanded surfaced field cap membranes.
Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications
Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

Maximum Design Pressure: -75 psf. (General Limitation #7)

Membrane: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga., ASTM A1008 Grade 80 steel deck fastened 6" o.c. with Traxx/5 fasteners to supports spaced 6 ft. o.c. Side laps are fastened with Traxx/1 fasteners spaced 30 in. o.c.

System Type D(6): Membrane fastened over preliminarily secured insulation.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
Any insulation listed in Table 2, flat or tapered.	**N/A**	**N/A**

Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: Soprafix, Soprafix Base 622, Soprafix [X]*, Soprafix Base 614*, Soprafix-e or Soprafix Base 641, mechanically attached with OMG Polymer Batten Strip-TL and OMG #15 Roofgrip Large Head fasteners, Trufast Flat Batten Bar and Trufast #15 EHD Fasteners, Soprafix MBB-R and Soprema #15 Fasteners or Soprema #15 HD Fasteners, or SFS Dekfast Coiled Batten Bar and #15 Dekfast fasteners, spaced 12" o.c. in the min. 5" lap.

*Requires heat welded ply or cap membrane.

Ply Sheet: (Optional) One or more layers of Sopralene Flam 180*, Sopralene 180 SP 3.5, Soprafix, Soprafix Base 622, Sopralene Flam 250*, Sopralene 250 SP, heat welded

Membrane: Soprastar Flam, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 180 FR+ GR, Sopralene Flam 250 FR GR, Sopralene Flam 250 FR+ GR, heat welded.

Surfacing: Surfacing is Optional on granular surfaced field cap membranes.
Surfacing is Required for smooth or sanded surfaced field cap membranes.
Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications
Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

Maximum Design Pressure: -97.5 psf. (See General Limitation #7.)

Membrane: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga., ASTM A1008 Grade 80 steel deck fastened 6" o.c. with Traxx/5 fasteners to supports spaced 6 ft. o.c. Side laps are fastened with Traxx/1 fasteners spaced 30 in. o.c.

System Type D(7): Membrane fastened over preliminarily fastened insulation

All General and System Limitations apply.

One or more layers of any of the following insulations.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
Any insulation listed in Table 2, flat or tapered.	**N/A**	**N/A**

Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: Soprafix, Soprafix Base 622, Soprafix [X] or Soprafix Base 614, mechanically attached with OMG Polymer Batten Strip-TL and OMG #15 Roofgrip Large Head fasteners, Trufast Flat Batten Bar and Trufast #15 EHD Fasteners, Soprema MBB-R batten bar and Soprema #15 Fasteners or Soprema #15 HD Fasteners, or SFS Dekfast Coiled Batten Bar and #15 Dekfast fasteners, spaced 12" o.c. in the min. 4" heat welded lap.

*Requires heat welded ply or cap membrane.

Ply Sheet: (Optional) One or more layers of Sopralene Flam 180*, Sopralene 180 SP 3.5, Soprafix, Soprafix Base 622, Sopralene Flam 250*, Sopralene 250 SP, heat welded

*Requires heat welded cap membrane.

Membrane: Soprastar Flam, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 180 FR+ GR, Sopralene Flam 250 FR GR, Sopralene Flam 250 FR+ GR, heat welded.

Surfacing: Surfacing is Optional on granular surfaced field cap membranes.
Surfacing is Required for smooth or sanded surfaced field cap membranes.
Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications
Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

Maximum Design Pressure: -105 psf. (See General Limitation #7.)

Membrane: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18 ga. Steel type 3N steel decking attached to minimum ½" thick, W14 x 43 purlins with an 8" wide top flange spaced maximum 9 ft. o.c. using ¾" puddle welds spaced 8" o.c. (every bottom flute). Two welds per attachment point, spaced 4" apart. Steel deck side laps are attached 24" o.c. with Traxx/1 fasteners.

System Type D(8): Membrane attached over preliminary fastened insulation.

All General and System Limitations apply

One or more layers of any of the following insulations.

Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Any insulation listed in Table 2, flat or tapered.	**N/A**	**N/A**

Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Soprafix [X]*, Soprafix Base 614* or Sopralene 250 Flam* fastened through the insulation to the structural deck using SFS Dekfast #15 HS Fasteners or Soprema #15 Fasteners and 70-mm round plates spaced 16" o.c. in a 5" wide lap and 16" o.c. in one center row. The side lap fastener row is encapsulated in the heat welded lap and the center row is stripped-in with an 8" wide strip of heat welded membrane.

*Requires heat welded ply or cap membrane.

Ply Sheet: (Optional) One or more plies of Elastophene Flam*, Elastophene Flam 2.2*, Sopralene Flam 180*, Sopralene Flam 250*, Sopralene 180 SP, Sopralene 250 SP, heat welded

*Requires heat welded cap membrane.

Membrane: Elastophene Flam GR, Elastophene Flam FR GR, Elastophene Flam FR+ GR, Elastophene Flam LS FR GR, Soprastar Flam, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 250 FR GR, Sopralene Flam 180 FR+ GR, Sopralene Flam 250 FR+ GR, Sopralast 50 TV Alu, heat welded

Surfacing: Surfacing is Optional on granular surfaced field cap membranes.
Surfacing is Required for smooth or sanded surfaced field cap membranes.
Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications
Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

Maximum Design Pressure: -112.5 psf. (See General Limitation #7.)

Membrane: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. Grade 33 Steel decking fastened 6" o.c. with two Traxx/5 fasteners and 0.75" diameter washers to supports spaced maximum 6' o.c. Deck side laps are fastened maximum 13" o.c. with Traxx/1 fasteners.

System Type D(9): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
(Minimum two layers of the following) ACFoam-II, Sopra-ISO s, H-Shield, M-Shield, Sopra-ISO r, ENRGY 3, ISO 95+ GL, Multi-Max 3 Minimum 1.5" thick	**N/A**	**N/A**
Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Sopraboard Minimum 0.25" thick	**1 (#14)**	**1:4**

Note: Insulation layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Soprafix [X]*, Soprafix Base 614* or Sopralene Flam 250*, heat welded to insulation with a minimum 6" wide lap, then fastened to the deck as described below:
*Requires heat welded ply or cap membrane.

Fastening: Attach base sheet using Soprafix 2-3/8" SB Stress Plates and Soprema #15 Fasteners in rows spaced maximum 12" o.c., with fasteners spaced maximum 12" o.c. within each row.

Ply Sheet: Sopralene Flam 180*, Sopralene Flam 250*, heat welded with minimum 3" wide lap.

Membrane: Soprastar Flam, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 250 FR GR, heat welded with minimum 3" wide lap.

Surfacing: Surfacing is Optional on granular surfaced field cap membranes.
Surfacing is Required for smooth or sanded surfaced field cap membranes.
Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications
Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system

Maximum Design Pressure: -112.5 psf, (See General Limitation #7)

Membrane: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. ASTM A1008 Grade 80 steel deck fastened 6" o.c. with Traxx/5 fasteners to supports spaced 6 ft. o.c. Side laps are fastened with Traxx/1 fasteners spaced 30 in. o.c.

System Type D(10): Membrane fastened over preliminarily secured insulation

All General and System Limitations apply.

One or more layers of any of the following insulations.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
Any insulation listed in Table 2, flat or tapered.	**N/A**	**N/A**

Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: Soprafix, Soprafix Base 622, Soprafix [X] or Soprafix Base 614, mechanically attached with OMG Polymer Batten Strip-TL and OMG #15 Roofgrip Large Head fasteners, Trufast Flat Batten Bar and Trufast #15 EHD Fasteners, Soprema MBB-R Batten Bar and Soprema #15 Fasteners or Soprema #15 HD Fasteners, or SFS Dekfast Coiled Batten Bar and #15 Dekfast fasteners, spaced 6" o.c. in every other minimum 4" heat welded lap. Intermediate, non-fastened laps are 3" wide and heat welded.

*Requires heat welded ply or cap membrane.

Ply Sheet: (Optional) One or more layers of Sopralene Flam 180*, Sopralene 180 SP 3.5, Soprafix, Soprafix Base 622, Sopralene Flam 250*, Sopralene 250 SP, heat welded.

*Requires heat welded cap membrane.

Membrane: Soprastar Flam, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 180 FR+ GR, Sopralene Flam 250 FR GR, Sopralene Flam 250 FR+ GR, heat welded.

Surfacing: Surfacing is Optional on granular surfaced field cap membranes.
Surfacing is Required for smooth or sanded surfaced field cap membranes.
Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications
Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

Maximum Design Pressure: -120 psf. (See General Limitation #7.)

Membrane: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. Grade 33 Steel decking fastened 6" o.c. with two Traxx/5 fasteners and 0.75" diameter washers to supports spaced maximum 6' o.c. Deck side laps are fastened maximum 13" o.c. with Traxx/1 fasteners.

System Type D(11): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ACFoam-II, Sopra-ISO s, H-Shield, M-Shield, Sopra-ISO r, ENRGY 3, ISO 95+ GL, Multi-Max 3 (flat or tapered)		
Minimum 1.5" thick	**N/A**	**N/A**
Middle Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
DensDeck (staggered from base layer)		
Minimum 0.5" thick	**N/A**	**N/A**
Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Sopraboard		
Minimum 0.25" thick	**1 (#14)**	**1:4**

Note: Insulation layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Soprafix [X]*, Soprafix Base 614* or Sopralene Flam 250*, heat welded to insulation with a minimum 6" wide lap, then fastened to the deck as described below:
*Requires heat welded ply or cap membrane.

Fastening #1: Attach base sheet using Soprafix 2-3/8" SB Stress Plates and Soprema #15 Fasteners in rows spaced maximum 18" o.c., with fasteners spaced maximum 6" o.c. within each row.
(Meets Maximum Design Pressure of -157.5 psf, See General Limitation #7)

Fastening #2: Attach base sheet using Soprafix 2-3/8" SB Stress Plates and Soprema #15 Fasteners in rows spaced maximum 18" o.c., with fasteners spaced maximum 12" o.c. within each row.
(Meets Maximum Design Pressure of -60 psf, See General Limitation #7)

Fastening #3: Attach base sheet using Soprafix 2-3/8" SB Stress Plates and Soprema #15 Fasteners in rows spaced maximum 12" o.c., with fasteners spaced maximum 12" o.c. within each row.
(Meets Maximum Design Pressure of -157.5 psf, See General Limitation #7)

Ply Sheet: Sopralene Flam 180*, Sopralene Flam 250*, heat welded with minimum 3" wide lap.

Membrane:	Soprastar Flam, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 250 FR GR, heat welded with minimum 3" wide lap.
Surfacing:	Surfacing is Optional on granular surfaced field cap membranes. Surfacing is Required for smooth or sanded surfaced field cap membranes. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system
Maximum Design Pressure:	See Fastening Requirements Above.

Membrane: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. Grade 33 Steel decking fastened maximum 6" o.c. with two Traxx/5 fasteners and 0.75" diameter washers to supports spaced maximum 6' o.c. Deck side laps are fastened maximum 12" o.c. with Traxx/1 fasteners.

System Type D(12): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

Thermal Barrier: (Optional) Minimum 5/8" thick SECUROCK Gypsum-Fiber Roof Board, DensDeck, DensDeck Prime or DensDeck DuraGuard, pre-secured with a maximum contributory area of 1:4 ft²

Vapor Barrier: (Optional) One or more layers of Elastophene Sanded, Elastophene Sanded 3.0, Elastophene HS Sanded, Elastophene 180 Sanded, Sopralene 180 Sanded 2.2, Sopralene 180 Sanded, Sopralene 250 Sanded, Elastophene PS, Elastophene 180 PS, Sopralene 180 PS 2.2, adhered in hot asphalt at 25 lbs./sq. or applied in FM Adhesive, FM Adhesive (VOC), COLPLY Modified Adhesive or Soprastar Adhesive at a rate of 1.5 gal./sq.

Or

One or two plies of Sopra IV or Sopra VI adhered in hot asphalt at 25 lbs./sq.

Or

Elastophene Flam, Elastophene Flam 2.2, Elastophene SP, Elastophene SP 3.0, Elastophene Flam HS, Sopralene 180 SP, Sopralene 180 SP 3.5, Sopralene 250 SP, Sopralene Flam 180, Sopralene Flam 250, heat welded

One or more layers of any of the following insulations.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft²**
ACFoam-II, Sopra-ISO s, ISO 95+ GL, H-Shield, ENRGY 3, Multi-Max 3, M-Shield, Sopra-ISO r		
Minimum 1.5" thick	**N/A**	**N/A**

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft²**
SECUROCK Gypsum-Fiber Roof Board, DensDeck, DensDeck Prime, DensDeck DuraGuard		
Minimum 0.5" thick	**2, 3, 10, 46, 47**	**1:4 ft²**

Note: Insulation layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Primer: (Optional) Coverboard is primed with an approved ASTM D41 asphalt primer at a rate of 100-150 ft2/gal.

Base Sheet:	Sopralene Flam 180, Sopralene Flam 250, Soprafix, Soprafix Base 622, Soprafix [F], Soprafix Base 613, Soprafix [S], Soprafix Base 612, Soprafix [X], Soprafix Base 614, Soprafix-e or Soprafix Base 641 fastened as specified below:
Fastening #1:	Heat weld base membrane to the coverboard with minimum 3" laps. Mechanically attach heat welded base sheet with Soprema #14 or Soprema #15 fasteners and Soprema Soprafix 2" SB Stress plates, Dekfast #14 or Dekfast #15 HS fasteners with Dekfast IF-2-SB, Dekfast Galvalume Steel Round 2-3/8" 20 ga. Barbed plates, Trufast #15 EHD Fasteners with Trufast 2" Barbed Metal Stress Plates or Trufast 2.4" Barbed Seam Plates, Soprema #15 HD Fasteners with Soprema 2" Seam Plates or Soprafix 2-3/8" –SB Stress Plates spaced maximum 12" o.c. through the side laps and two equally spaced staggered rows in the field of the membrane. ***(Maximum Design Pressures –165 psf; See General Limitation #7.)***
Fastening #2	Mechanically attach base sheet with Soprema #14 or Soprema #15 fasteners and Soprema Soprafix 2" SB Stress plates, Dekfast #14 or Dekfast #15 HS fasteners with Dekfast IF-2-SB, Dekfast Galvalume Steel Round 2-3/8" 20 ga. Barbed plates, Trufast #15 EHD Fasteners with Trufast 2" Barbed Metal Stress Plates or Trufast 2.4" Barbed Seam Plates, Soprema #15 HD Fasteners with Soprema 2" Seam Plates or Soprafix 2-3/8" –SB Stress Plates, spaced maximum 12" o.c. through the minimum 3" wide side lap and two equally spaced staggered rows in the field of the membrane. ***(Maximum Design Pressures –150 psf; See General Limitation #7.)***
Ply Sheet:	Elastophene Flam, Elastophene Flam 2.2, Elastophene Flam HS, Sopralene Flam 180, Sopralene Flam 250, heat welded
Membrane:	Elastophene Flam FR GR, Elastophene Flam GR, Elastophene Flam HS FR GR, Elastophene Flam LS FR GR, Sopralast 50 TV Alu, Soprastar Flam, Sopralene Flam, 180 FR GR, Sopralene Flam 180 GR, Sopralene Flam 250 FR GR, heat welded
Surfacing:	Surfacing is Optional on granular surfaced field cap membranes. Surfacing is Required for smooth or sanded surfaced field cap membranes. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.
Maximum Design Pressure:	See Fastening Options Above

Membrane: SBS

Deck Type 2I: Steel Insulated

Deck Description: 18-22 ga. Grade 33 Steel decking fastened maximum 6" o.c. with two Traxx/5 fasteners and 0.75" diameter washers to supports spaced maximum 6' o.c. Deck side laps are fastened maximum 12" o.c. with Traxx/1 fasteners.

System Type D(13): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

Thermal Barrier: (Optional) Minimum 5/8" thick SECUROCK Gypsum-Fiber Roof Board, DensDeck, DensDeck Prime or DensDeck DuraGuard, pre-secured with a maximum contributory area of 1:4 ft²

Vapor Barrier: (Optional) One or more layers of Elastophene Sanded, Elastophene Sanded 3.0, Elastophene HS Sanded, Elastophene 180 Sanded, Sopralene 180 Sanded 2.2, Sopralene 180 Sanded, Sopralene 250 Sanded, Elastophene PS, Elastophene 180 PS, Sopralene 180 PS 2.2, adhered in hot asphalt at 25 lbs./sq. or applied in FM Adhesive, FM Adhesive (VOC), COLPLY Modified Adhesive or Soprastar Adhesive at a rate of 1.5 gal./sq.

Or

One or two plies of Sopra IV or Sopra VI adhered in hot asphalt at 25 lbs./sq.

Or

Elastophene Flam, Elastophene Flam 2.2, Elastophene SP, Elastophene SP 3.0, Elastophene Flam HS, Sopralene 180 SP, Sopralene 180 SP 3.5, Sopralene 250 SP, Sopralene Flam 180, Sopralene Flam 250, heat welded.

One or more layers of any of the following insulations.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ACFoam-II, Sopra-ISO s, ISO 95+ GL, H-Shield, ENRGY 3, Multi-Max 3, M-Shield, Sopra-ISO r		
Minimum 1.5" thick	**N/A**	**N/A**

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
SECUROCK Gypsum-Fiber Roof Board, DensDeck, DensDeck Prime, DensDeck DuraGuard		
Minimum 0.5" thick	**2, 21, 3, 11 or 12**	**1:4 ft²**

Note: Insulation layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Primer: (Optional) Coverboard is primed with an approved ASTM D41 asphalt primer at a rate of 100-150 ft2/gal.

Base Sheet: Sopralene 180 SP, Sopralene 180 SP 3.5, Sopralene 250 SP, fastened as specified below:

Fastening #1:	Heat weld base sheet to coverboard with minimum 3" wide side lap. Mechanically attach heat welded base sheet with Soprema #14 or Soprema #15 fasteners and Soprema Soprafix 2" SB Stress plates, Dekfast #14 or Dekfast #15 HS fasteners with Dekfast IF-2-SB, Dekfast Galvalume Steel Round 2-3/8" 20 ga. Barbed plates, Trufast#15 EHD Fasteners with Trufast 2" Barbed Metal Stress Plates or Trufast 2.4" Barbed Seam Plates, Soprema #15 HD Fasteners with Soprema 2" Seam Plates or Soprafix 2-3/8" –SB Stress Plates, spaced maximum 12" o.c. through the side laps and two equally spaced staggered rows in the field of the membrane. ***(Maximum Design Pressures –165 psf; See General Limitation #7.)***
Fastening #2	Mechanically attach heat welded base sheet with Soprema #14 or Soprema #15 fasteners and Soprema Soprafix 2" SB Stress plates, Dekfast #14 or Dekfast #15 HS fasteners with Dekfast IF-2-SB, Dekfast Galvalume Steel Round 2-3/8" 20 ga. Barbed plates, Trufast #15 EHD Fasteners with Trufast 2" Barbed Metal Stress Plates or Trufast 2.4" Barbed Seam Plates, Soprema #15 HD Fasteners with Soprema 2" Seam Plates or Soprafix 2-3/8" –SB Stress Plates, spaced maximum 12" o.c. through the minimum 3" wide side lap and two equally spaced staggered rows in the field of the membrane. ***(Maximum Design Pressures –150 psf; See General Limitation #7.)***
Ply Sheet:	Elastophene 180 PS, Sopralene 180 PS 2.2, Elastophene PS, adhered in full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Membrane:	Elastophene Flam FR GR, Elastophene Flam GR, Elastophene Flam HS FR GR, Elastophene Flam LS FR GR, Sopralast 50 TV Alu, Soprastar Flam, Sopralene Flam, 180 FR GR, Sopralene Flam 180 GR, Sopralene Flam 250 FR GR, heat welded with minimum 3" wide side lap
Surfacing:	Surfacing is Optional on granular surfaced field cap membranes. Surfacing is Required for smooth or sanded surfaced field cap membranes. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.
Maximum Design Pressure:	See Fastening Options Above

Membrane: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. Grade 33 Steel decking fastened maximum 6" o.c. with two Traxx/5 fasteners and 0.75" diameter washers to supports spaced maximum 6' o.c. Deck side laps are fastened maximum 12" o.c. with Traxx/1 fasteners.

System Type D(14): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft²**
ACFoam-II, Sopra-ISO s, ISO 95+ GL, H-Shield, ENRGY 3, Multi-Max 3, M-Shield, Sopra-ISO r		
Minimum 1.5" thick	**N/A**	**N/A**

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft²**
SECUROCK Gypsum-Fiber Roof Board, DensDeck, DensDeck Prime, DensDeck DuraGuard		
Minimum 0.5" thick	**2, 21, 3, 11, 12**	**1:4 ft²**

Note: Insulation layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Primer: (Optional) Coverboard is primed with an approved ASTM D41 asphalt primer at a rate of 100-150 ft2/gal.

Base Sheet: Sopralene 180 SP, Sopralene 180 SP 3.5, Sopralene 250 SP, Soprafix [F]*, Soprafix Base 613*, Soprafix [S]*, Soprafix Base 612*, Soprafix [X]*, Soprafix Base 614*, Soprafix* or Soprafix Base 622*, heat welded to coverboard.

*Requires heat welded cap membrane.

Fastening #1: Heat weld base sheet to coverboard with minimum 3" wide side lap. Mechanically attach heat welded base sheet with Soprema #14 or Soprema #15 fasteners and Soprema Soprafix 2" SB Stress plates, Dekfast #14 or Dekfast #15 HS fasteners with Dekfast IF-2-SB, Dekfast Galvalume Steel Round 2-3/8" 20 ga. Barbed plates, Trufast #15 EHD Fasteners with Trufast 2" Barbed Metal Stress Plates or Trufast 2.4" Barbed Seam Plates, Soprema #15 HD Fasteners with Soprema 2" Seam Plates or Soprafix 2-3/8" –SB Stress Plates, spaced maximum 12" o.c. through the side laps and two equally spaced staggered rows in the field of the membrane.
(Maximum Design Pressures –165 psf; See General Limitation #7.)

Fastening #2	Mechanically attach base sheet with Soprema #14 or Soprema #15 fasteners and Soprema Soprafix 2" SB Stress plates, Dekfast #14 or Dekfast #15 HS fasteners with Dekfast IF-2-SB, Dekfast Galvalume Steel Round 2-3/8" 20 ga. Barbed plates, Trufast #15 EHD Fasteners with Trufast 2" Barbed Metal Stress Plates or Trufast 2.4" Barbed Seam Plates, Soprema #15 HD Fasteners with Soprema 2" Seam Plates or Soprafix 2-3/8" –SB Stress Plates, spaced maximum 12" o.c. through the minimum 3" wide side lap and two equally spaced staggered rows in the field of the membrane. ***(Maximum Design Pressures –150 psf; See General Limitation #7.)***
Ply Sheet:	Elastophene SP, Elastophene SP 3.0, Sopralene 180 SP, Sopralene 180 SP 3.5, Sopralene 250 SP, heat welded Or Elastophene 180 Sanded, Sopralene 180 Sanded 2.2, Elastophene HS Sanded, Elastophene Sanded, Sopralene 180 , Sopralene 180 Sanded, Sopralene 250 Sanded, or 1-2 plies of Sopra IV or Sopra VI, adhered in full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Membrane:	Elastophene FR GR, Elastophene GR, Elastophene HS FR GR, Elastophene HS GR, Elastophene LS FR GR, Sopralene 180 FR GR, Sopralene 250 FR GR, Soprastar Sanded, adhered in full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Surfacing:	Surfacing is Optional on granular surfaced field cap membranes. Surfacing is Required for smooth or sanded surfaced field cap membranes. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.
Maximum Design Pressure:	See Fastening Options Above

STEEL DECK SYSTEM LIMITATIONS:

1. If mechanical attachment to the structural deck through the lightweight insulating concrete is proposed, a field withdrawal resistance testing shall be performed to determine equivalent or enhanced fastener patterns and density. All testing and fastening design shall be in compliance with Testing Application Standard TAS 105 and Roofing Application Standard RAS 117, calculations shall be signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant.
2. For steel deck application where specific deck construction is not referenced: The deck shall be a minimum 22 gage attached with 5/8" puddle welds with weld washers at every flute with maximum deck spans of 5 ft. o.c.

GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance; refer to a current Approved Roofing Materials Directory for fire ratings of this product.
2. Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
3. All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
4. An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each side lap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq.
   Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.
5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. Insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
8. All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform to Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**
10. All products listed herein shall have a quality assurance audit in accordance with the Florida Building Code and Rule 9N-3 of the Florida Administrative Code.

END OF THIS ACCEPTANCE